

## ABSTRACT

A magnetic recording medium (300) includes a substrate (1) and on the substrate (1) a first underlying layer (32), a second underlying layer (33), a magnetic layer (34), and a protective layer (35). Because of the existence of the first underlying layer (32) of Hf, initial growth layer having no specific crystal structure is prevented from growing in the second underlying layer (33). The second underlying layer (33) has a structure in which CoO particles having a cross section of a regular hexagon and separated by SiO<sub>2</sub> portion are arranged in honeycomb. Since magnetic particles are epitaxially grown from CoO particles, the size of the magnetic particles and particle size distribution can be controlled, and the magnetic interaction between magnetic particles can be lessened. The underlying layer (33) and the protective layer (35) are formed by ECR sputtering. Such a magnetic recording medium is free from noise and thermal fluctuation, and ultrahigh recording density over 40 Gbit/inch<sup>2</sup> is realized.